

ABSTRACT

A method for treating exhaust gas includes: adsorbing target components in the exhaust gas with an adsorbent (5); introducing a nitrogen gas with an oxygen concentration of 10 vol% or less and a purity of 90 vol% or more into the adsorbent (5); and applying (6, 7, 8) nonthermal plasma to the adsorbent (5). After the adsorbent (5) adsorbs the target components in the exhaust gas, the nitrogen gas is introduced into the adsorbent (5), and then an electric discharge is generated so that the nonthermal plasma of the nitrogen gas is applied to the adsorbent (5) and causes desorption of the target components and regeneration of the adsorbent (5). This method can remove the target components effectively from oxygen-containing exhaust gas by using nitrogen gas plasma with high activity as a result of ionization of a nitrogen gas and combining adsorption, desorption by the nitrogen gas plasma, and nitrogen plasma treatment.